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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/743,876

12/24/2003

Ching-Lin Fan

FANC3005/REF

9348

23364

7590

09/27/2004

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EXAMINER

NADAV, ORI

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,876

Applicant(s)

FAN ET AL.

Examiner

ori nadav

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Information Disclosure Statement***

If applicant is aware of any relevant prior art, he/she requested to cite it on form PTO-1449 in accordance with the guidelines set forth in M.P.E.P. 609.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, organic electroluminescent medium comprises a plurality of layers (an electron injecting layer, an electron transporting layer, an organic electroluminescent layer, a hole transporting layer, a hole injecting layer), as recited in claim 8, and a capacitor, as recited in claims 15-16, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional

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replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claimed limitation of using conductive lines "to connect the and/or organic electroluminescent devices", as recited in claim 1, is unclear as to what is meant by the phrase "the and/or r".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1-21, insofar as in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Inukai et al. (6,788,003) in view of Hanakawa et al. (6,747,723).

Regarding claims 1, 7 and 9-10, Inukai et al. teach in figure 16B and related text an active matrix organic electroluminescent panel, comprising a substrate;

a plurality of functional elements located over the substrate;

a plurality of organic electroluminescent devices disposed over the substrate; wherein the organic electroluminescent device comprised, in sequence, a first electrode 947 (see figure 16A) made of ITO, at least one organic electroluminescent media 954 and a second electrode 951 made of MgAg; and

a plurality of conductive lines disposed over the surface of the substrate to connect the and/or organic electroluminescent devices; wherein

Inukai et al. do not teach conductive lines comprise silver-copper alloy.

Hanakawa et al. teach conductive lines comprise silver-copper alloy (column 12, lines 4-8).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the conductive lines in Inukai et al.'s device of silver-copper alloy in order to improve the conductivity, the reliability, and the characteristics of the device.

Regarding claim 2, Inukai et al. do not teach silver-copper alloy comprises 80 to 99.8 mol% of silver, 0.1 to 10 mol% of copper, and 0.1 to 10 mol% of transition

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metal selected from the group consisting of palladium, magnesium, gold, platinum, and the combinations thereof, and the total mol% of the silver-copper alloy is 100. Hanakawa et al. teach silver-copper alloy comprises 80 to 99.8 mol% of silver (98%), and combined 0.1 to 10 mol% of copper and transition metal selected from the group consisting of palladium, magnesium, gold, platinum, and the combinations thereof, and the total mol% of the silver-copper alloy is 100. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use silver-copper alloy comprises 80 to 99.8 mol% of silver, 0.1 to 10 mol% of copper, and 0.1 to 10 mol% of transition metal selected from the group consisting of palladium, magnesium, gold, platinum, and the combinations thereof, in Inukai et al.'s device in order to improve the quality of the conductive material. Note that substitution of materials is not patentable even when the substitution is new and useful. *Safetran Systems Corp. v. Federal Sign & Signal Corp.* (DC NIII, 1981) 215 USPQ 979.

Regarding claim 3, Inukai et al. teach conductive line comprises an alloy and a titanium film (column 25, lines 29-32). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a silver-copper alloy further comprises at least one adhesion improver selected from the group consisting of titanium, aluminum, nickel, cobalt, and chromium in Inukai et al.'s device in order to improve the quality of the conductive layer. Note that substitution of materials is not patentable even when the substitution is new and

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useful. Safetran Systems Corp. v. Federal Sign & Signal Corp. (DC NIII, 1981)
215 USPQ 979.

Regarding claim 4, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the mole percentage of the adhesion improver ranges from 0.01 to 5 in Inukai et al.'s device because it is well within the skills of an artisan to find the best material's combination in order to improve the quality of the conductive layer.

Regarding claims 5, 6, 8, 11-12 and 18, Inukai et al. teach a buffer layer 949 disposed over the surface of the substrate, wherein the buffer layer is made of silicon nitrides, silicon oxides, or silicon oxynitride, wherein the organic electroluminescent medium comprises an electron injecting layer, an electron transporting layer, an organic electroluminescent layer, a hole transporting layer, a hole injecting layer, and the combinations thereof located between the second electrode and the first electrode,

wherein there is at least one dielectric passivation layer disposed between the conductive lines, wherein the dielectric passivation layer is made of polyimide, acrylic resins, fluoric resins, epoxy resins, silicon oxide, silicon nitride, or silicon oxynitride, and at least an insulating layer.

Regarding claims 13-16, Inukai et al. teach a functional element is a transistor comprising a source, a gate and a drain having staggered, inverted staggered,

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coplanar, or inverted coplanar arrangements, wherein the gate and/or the drain are made of polysilicon, and wherein the functional element comprises a capacitor (figure 1), wherein the functional element comprises two sets of drains, sources and gates, and a capacitor.

Regarding claim 17 and 21, prior art teaches a connecting conductive line, which connects the functional elements and comprises the silver-copper alloy, wherein conductive line is power conducting line, gate conducting line and/or source conducting line.

Regarding claim 19, Inukai et al. teach a substrate is a glass substrate, a plastic substrate, or a transparent resin plate.

Regarding claim 20, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a substrate made of polycarbonate, polyethylene terephthalate (PET), cyclic olefin copolymer (COC), or metal-containing cyclic olefin copolymer (m-COC), in Inukai et al.'s device in order to improve the quality of the substrate. Note that substitution of materials is not patentable even when the substitution is new and useful. *Safetran Systems Corp. v. Federal Sign & Signal Corp.* (DC NIII, 1981) 215 USPQ 979.

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Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to *Examiner Nadav* whose telephone number is **(571) 272-1660**. The Examiner is in the Office generally between the hours of 7 AM to 4 PM (Eastern Standard Time) Monday through Friday.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **308-0956**



O.N.
9/23/04

ORI NADAV
PRIMARY EXAMINER
TECHNOLOGY CENTER 2800